IN THE CLAIMS:

Set forth below in ascending order, with status identifiers, is a complete listing of all claims currently under examination. Changes to any amended claims are indicated by strikethrough and underlining. This listing also reflects any cancellation and/or addition of claims.

1. – 2. (Canceled)

3. (New) A processor-readable medium comprising code representing instructions to cause a processor to:

analyze a first scene graph having a plurality of interconnected nodes, the first scene graph being associated with a first scene;

analyze a second scene graph having a plurality of interconnected nodes, the second scene graph being associated with a second scene; and

associate, using a neutral scene graph, each node from the plurality of interconnected nodes of the first scene graph with a node from the plurality of interconnected nodes of the second scene graph independent of any connections between the plurality of interconnected nodes of the first scene graph and any connections between the plurality of interconnected nodes of the second scene graph.

4. (New) The processor-readable medium of claim 3, wherein the neutral scene graph provides a topology transformation between the first scene graph and the second scene graph.

5. (New) The processor-readable medium of claim 3, wherein the first scene graph and the second scene graph are asynchronous, the neutral scene graph being configured to synchronize the first scene graph and the second scene graph.

6. (New) The processor-readable medium of claim 3, wherein the first scene graph is a graphical scene graph, the second scene graph being a haptic scene graph.

7. (New) The processor-readable medium of claim 3, further comprising code representing instructions to cause a processor to:

update information associated with the first scene graph at a first update rate; and

update information associated with the second scene graph at a second update rate, the second update rate being substantially higher than the first update rate.

8. (New) The processor-readable medium of claim 3, further comprising code representing instructions to cause a processor to:

update information associated with the first scene graph at an update rate between about 10-60 Hz; and

update information associated with the second scene graph at an update rate between about 1000-2000 Hz.

9. (New) The processor-readable medium of claim 3, further comprising code representing instructions to cause a processor to:

update information associated with the first scene graph at a first update rate; and

update information associated with the second scene graph at a second update rate, the second update rate being substantially higher than the first update rate, the code representing instructions to cause a processor to update the information associated with the second scene graph being configured to cause the processor to update the information associated with the second scene graph via a separate thread from the code representing instructions to cause a processor to update the information associated with the first scene graph.

10. (New) The processor-readable medium of claim 3, further comprising code representing instructions to cause a processor to:

analyze a third scene graph including a plurality of interconnected nodes, the third scene graph being associated with a third scene, the code representing instructions to cause a processor to associate being further configured to cause a processor to associate, using a neutral scene graph, each node from the plurality of interconnected nodes of the first scene graph with a node from the plurality of interconnected nodes of the third scene graph independent of any

connections between the plurality of interconnected nodes of the first scene graph and any connections between the plurality of interconnected nodes of the third scene graph.

11. (New) A processor-readable medium comprising code representing instructions configured to cause a processor to:

uniquely associate a plurality of real-world objects with a plurality of virtual representations, each virtual representation from the plurality of virtual representations being a representation of its associated real-world object from the plurality of real-world objects;

determine if at least one contact state exists between a first virtual representation from the plurality of virtual representations and a second virtual representation from the plurality of virtual representations;

if at least one contact state exists, determine if the at least one contact state meets a predetermined threshold number of required contact states between the first virtual representation and the second virtual representation, each of the at least one contact state being associated with a corresponding portion of the first virtual representation and a portion of the second virtual representation;

if the at least one contact state meets a predetermined threshold number of contact states, determine if a minimum drop angle parameter is exceeded for each portion of the first virtual representation associated with the at least one contact state;

if the minimum drop angle parameter is exceeded, associate the second virtual representation with a grasp state; and

if the minimum drop angle parameter is not exceeded, associate the second virtual representation with a release state.

12. (New) The processor-readable medium of claim 11, wherein the first virtual representation is a virtual representation of a hand, each portion of the virtual representation of the hand that is associated with a contact state being a virtual representation of a finger of the hand.

13. (New) The processor-readable medium of claim 11, further comprising code representing instructions to cause a processor to:

analyze a relationship between the first virtual representation and the second virtual representation;

determine, at least partially based partially on the analyzed relationship, a local surface approximation associated with each portion of the first virtual representation associated with the at least one contact state and each portion of the first virtual representation within a predetermined distance from the second virtual representation; and

store each local service approximation in memory.

14. (New) The processor-readable medium of claim 11, further comprising code representing instructions to cause a processor to:

analyze a relationship between the first virtual representation and the second virtual representation;

determine, at least partially based partially on the analyzed relationship, a local surface approximation associated with each portion of the first virtual representation associated with the at least one contact state and each portion of the first virtual representation within a predetermined distance from the second virtual representation;

store each local service approximation in memory; and

send a signal configured to cause a haptic effect at least partially based on at least one local service approximation stored in memory, the haptic effect being configured to output a sensation at least partially based on the at least one contact state.

15. (New) A processor-readable medium comprising code representing instructions configured to cause a processor to:

determine a first local surface approximation associated with a virtual representation of a first real-world object based on a position of a virtual representation of a second real-world object relative to a position of the virtual representation of the first real-world object; and

output a signal configured to cause a haptic effect, the signal being output based on the first local surface approximation.

16. (New) The processor-readable medium of claim 15, wherein the first local surface approximation is from a plurality of surface approximations, the code representing instructions to cause a processor to determine the first local surface approximation including code representing instructions to cause a processor to select the first local surface approximation from the plurality of local surface approximations associated with the virtual representation of the first real-world object.

17. (New) The processor-readable medium of claim 15, wherein the first local surface approximation is from a plurality of surface approximations, the code representing instructions to cause a processor to determine the first local surface approximation including code representing instructions to cause a processor to combine at least two local surface approximations from the plurality of local surface approximations to produce the first local surface approximation.

18. (New) The processor-readable medium of claim 15, wherein the code representing instructions to cause a processor to output the signal is configured to output the signal based on a characteristic of the virtual representation of the first real-world object about the local surface approximation.

19. (New) The processor-readable medium of claim 15, wherein the code representing instructions to cause a processor to output the signal configured to cause a haptic effect is configured to output the signal based on a characteristic about a portion of the first real-world object corresponding to the local surface approximation.

20. (New) The processor-readable medium of claim 15, wherein the code representing instructions to cause a processor to determine the local surface approximation includes code representing instructions to cause a processor to determine a likelihood of a contact occurring between the virtual representation of the first real-world object and a virtual representation of a second real-world object.